WHAT IS CLAIMED IS:

1. A semiconductor light emitting device comprising:

a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types, and

a transparent electrode formed on the semiconductor multilayer structure,

wherein the transparent electrode contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor in the semiconductor multilayer structure, said semiconductor having an interface with the transparent electrode.

2. The semiconductor light emitting device of Claim 1, wherein the impurity elements are magnesium, zinc, beryllium, or silicon.

3. The semiconductor light emitting device of Claim 1, wherein the transparent electrode is made of indium tin oxide or gallium oxide.

4. The semiconductor light emitting device of Claim 1, further comprising, on the transparent electrode, a multilayer film that reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers.

5. The semiconductor light emitting device of Claim 4, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

6. The semiconductor light emitting device of Claim 1, further comprising:

a multilayer film, which is formed to the side of the semiconductor multilayer structure opposite to the transparent electrode, and which reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers or a plurality of semiconductor layers.

7. The semiconductor light emitting device of Claim 6, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

8. A semiconductor light emitting device comprising:

a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types, and

a transparent electrode formed on the semiconductor multilayer structure,

wherein the transparent electrode contains a metal element that adsorbs hydrogen.

9. The semiconductor light emitting device of Claim 8, wherein the metal element is nickel, palladium, or platinum.

10. The semiconductor light emitting device of Claim 8, wherein the transparent electrode is made of indium tin oxide or gallium oxide.

11. The semiconductor light emitting device of Claim 8, further comprising, on the transparent electrode, a multilayer film that reflects light emitted from the semiconductor

multilayer structure, and includes a plurality of dielectric layers.

12. The semiconductor light emitting device of Claim 11, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

13. The semiconductor light emitting device of Claim 8, further comprising:

a multilayer film, which is formed to the side of the semiconductor multilayer structure opposite to the transparent electrode, and which reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers or a plurality of semiconductor layers.

14. The semiconductor light emitting device of Claim 13, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

15. A semiconductor light emitting device comprising:

a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types, and

a passivation film formed on the semiconductor multilayer structure,

wherein the passivation film contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor in the semiconductor multilayer structure, said semiconductor having an interface with the passivation film.

16. The semiconductor light emitting device of Claim 15, wherein the impurity elements are magnesium, zinc, beryllium, or silicon.

17. The semiconductor light emitting device of Claim 15, further comprising:

a transparent electrode formed on the semiconductor multilayer structure where the passivation film is not formed.

18. The semiconductor light emitting device of Claim 17, wherein the transparent electrode is made of indium tin oxide or gallium oxide.

19. The semiconductor light emitting device of Claim 17, further comprising, on the transparent electrode, a multilayer film that reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers.

20. The semiconductor light emitting device of Claim 19, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

21. The semiconductor light emitting device of Claim 17, further comprising:

a multilayer film, which is formed to the side of the semiconductor multilayer structure opposite to the transparent electrode, and which reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers or a plurality of semiconductor layers.

22. The semiconductor light emitting device of Claim 21, wherein the multilayer

film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

23. A semiconductor light emitting device comprising:

a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types, and

a passivation film formed on the semiconductor multilayer structure,

wherein the passivation film contains a metal element that adsorbs hydrogen.

24. The semiconductor light emitting device of Claim 23, wherein the metal element is nickel, palladium, or platinum.

25. The semiconductor light emitting device of Claim 23, further comprising:

a transparent electrode formed on the semiconductor multilayer structure where the passivation film is not formed.

26. The semiconductor light emitting device of Claim 25, wherein the transparent electrode is made of indium tin oxide or gallium oxide.

27. The semiconductor light emitting device of Claim 25, further comprising, on the transparent electrode, a multilayer film that reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers.

28. The semiconductor light emitting device of Claim 27, wherein the multilayer

film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

29. The semiconductor light emitting device of Claim 25, further comprising:

a multilayer film, which is formed to the side of the semiconductor multilayer structure opposite to the transparent electrode, and which reflects light emitted from the semiconductor multilayer structure, and includes a plurality of dielectric layers or a plurality of semiconductor layers.

30. The semiconductor light emitting device of Claim 29, wherein the multilayer film is made of at least two substances among silicon oxide, silicon nitride, niobium oxide, hafnium oxide, titanium oxide and tantalum oxide.

31. A method for fabricating a semiconductor light emitting device, comprising the steps of:

forming, on a substrate, a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types; and

forming a transparent electrode on an electrode-formation face of the semiconductor multilayer structure by using material that contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor having the electrode-formation face, and then heat-treating the transparent electrode.

32. The method of Claim 31, further comprising, before the transparent-electrode

formation step, the steps of:

forming a passivation film on the semiconductor multilayer structure, and

removing from the passivation film a portion in which the transparent electrode is to be formed,

wherein the passivation film is formed using material that contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor in the semiconductor multilayer structure, said semiconductor having an interface with the passivation film.

33. The method of Claim 31, further comprising, before the transparent-electrode formation step, the steps of:

forming a passivation film on the semiconductor multilayer structure, and

removing from the passivation film a portion in which the transparent electrode is to be formed,

wherein the passivation film is formed using material that contains a metal element that adsorbs hydrogen.

34. A method for fabricating a semiconductor light emitting device, comprising the steps of:

forming, on a substrate, a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types; and

forming a transparent electrode on the semiconductor multilayer structure by using material that contains a metal element that adsorbs hydrogen, and then heat-treating the transparent electrode.

35. The method of Claim 34, further comprising, before the transparent-electrode formation step, the steps of:

forming a passivation film on the semiconductor multilayer structure, and

removing from the passivation film a portion in which the transparent electrode is to be formed,

wherein the passivation film is formed using material that contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor in the semiconductor multilayer structure, said semiconductor having an interface with the passivation film.

36. The method of Claim 34, further comprising, before the transparent-electrode formation step, the steps of:

forming a passivation film on the semiconductor multilayer structure, and

removing from the passivation film a portion in which the transparent electrode is to be formed,

wherein the passivation film is formed using material that contains a metal element that adsorbs hydrogen.

37. A method for fabricating a semiconductor light emitting device, comprising the steps of:

forming, on a substrate, a semiconductor multilayer structure comprising a plurality of Group III-V nitride semiconductor layers including two semiconductor layers of different conductivity types;

forming a first electrode made of metal on the semiconductor multilayer structure;

removing the substrate from the semiconductor multilayer structure; and

forming a transparent electrode on a second-electrode-formation face of the semiconductor multilayer structure by using material that contains an impurity element developing the same conductivity type as that of an impurity element introduced into a semiconductor having the second-electrode-formation face, wherein the second-electrode-formation face opposes the first electrode, and then heat-treating the transparent electrode.